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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,145	08/10/2001	Thomas J. Kane	LWE-142	4048

30869 7590 12/05/2003

LUMEN INTELLECTUAL PROPERTY SERVICES, INC.  
2345 YALE STREET, 2ND FLOOR  
PALO ALTO, CA 94306

EXAMINER
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NGUYEN, TUAN N

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 12/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/927,145

Applicant(s)

KANE ET AL

Examiner

Tuan N Nguyen

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pw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 9, 11-24, 26 and 28-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9, 11-22, 26 and 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.



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**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7, 9, 11-24, 26, and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galvanauskas et al ('458) in view of Hart et al ('685).

With respect to claims 1 and 16, Galvanauska et al discloses a passively Q-switched laser (715) for generating a pulsed primarily beam at a primary wavelength, wherein the passively Q-switched laser comprises an optical cavity containing a gain medium pumped by a pump source (710) and wherein said passively Q-switched laser generated said pulsed primarily beam with a duty cycle ranging from .015 to 1% (col. 11, line 31) and a pulse repetition rate 10 kHz (col. 14 line 42); a fiber amplifier (730) coupled to an output of said passively Q-switched laser for receiving said pulsed primarily beam and amplifying said pulsed primarily to produce a pulsed intermediate beam of intermediate pulse at said primarily wavelength and, a non-linear element

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(170) for frequency converting said pulsed intermediate beam in a single pass by second harmonic generation (cols. 6 and 14) to produce a pulsed output beam at an output wavelength, col. 6 line 8 to col. 14 line 67, see figures 4(a). Since Galvanauska discloses all elements of the claims and a pulse repetition rate of 10 kHz, it is coherent to have a pulse repetition rate of at least 100 kHz. Since it has been held that discovering an optimum value of a result effect variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Whereas Hart et al disclose a passively Q-switched laser system produced a 100 kHz pulse repetition rate, note col. 3 line 55, see figure 3. For the benefit of a passively Q-switched laser system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Galvanauska et al with the pulse repetition rate at 100 kHz as taught or suggested by Hart et al.

With respect to claims 2-7, 9, 11-15, 17-24, 26 and 28-32, Galvanauska et al discloses the wavelength range from 860 nm to 1100 nm (col. 9), the nonlinear optical crystal comprises a borate and said the borated is selected from the group consisting of BBO (col. 12), and frequency conversion efficiency is at least 50% (col. 6), and fiber amplifier is a cladding pumped amplifier (col. 14).

### **Response to Amendment**

2. Applicant's arguments with respect to claims 1-7, 9, 11-24, 26, 28-32 have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

#### **Citation Of The Pertinent References**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Batchko et al (US patent 6,480,325) discloses laser light source and image display based on quasi-phase matched nonlinear optical devices.

The patent to Sokol (US patent 6,384,368) discloses laser amplifier with variable and matched wavelength pumping.

The patent to Georges et al (US patent 6,373,864) discloses sub-nanosecond passively Q-switched microchip laser system.

The patent to Smart et al (US patent 6,340,806) discloses energy-efficient method and system for processing target material using an amplified, wavelength shifted pulse train.

***Communication Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) <sup>605-0756</sup>~~306-0247~~.

The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip  
SPE  
Art unit 2828

TMN  
November 14, 2003